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ALBERT THAER.

PHYSICIANS AND PHYSIC:

THREE ADDRESSES,

I. ON THE DUTIES OF YOUNG PHYSICIANS.
II. ON THE PROSPECTS OF YOUNG PHYSICIANS.
III. ON THE MODERN ADVANCEMENT OF PHYSIC.

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BY

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WITH FEELINGS OF SINCERE ESTEEM,

TO MY FRIEND

ROBERT S. GRIEVE, ESQ.

ONE OF THE PATRONS OF THE UNIVERSITY OF

EDINBURGH.

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ADDRESSES.

I.—ON THE DUTIES OF YOUNG PHYSICIANS.

AN ADDRESS TO THE EDINBURGH MEDICAL GRADUATES OF 1842, AFTER THEY HAD RECEIVED THEIR MEDICAL DEGREE, AT THE ANNUAL PUBLIC MEETING OF THE SENATUS ACADEMICUS OF THE UNIVERSITY, HELD ON THE 1ST AUGUST.

GENTLEMEN—Most of you are aware that in this University, it has long been the custom on the day of Graduation, for one of the medical professors to offer, on the part of his medical colleagues, a few observations to the newly made Graduates, before that official tie, that has hitherto bound them together as teachers and pupils, is formally and finally broken.

I gladly avail myself of the combined

privilege and duty which thus devolves upon me on the present occasion. And, in the first place, would I employ it for the purpose of congratulating you upon the honours you have this day obtained—honours the highest in Medicine which this or any other British University can confer. You have won these honours by an arduous and a prolonged course of study. For years past you have been accumulating the store of professional knowledge necessary for their purchase, by your labours in the class-room and in the closet, and by your study of disease by the bedside of sickness and suffering. To obtain the requisite knowledge many of you have perilled your own health, nor scrupled to breathe the poisoned breath of infection itself. And all of us could, with heartfelt regret, recount the names of some, who, commencing their studies along with you, might perhaps have been sharers in the joys and honours of this hour, had they not perished in their careers under the dangers to which the very nature of their calling exposed them—noble, but alas! young and early sacrifices at the shrine of professional duty. During the few moments, however, which we are yet to spend together, I would speak not of the past but of the future;—not of the mode in which you have conducted yourselves heretofore, but of the mode in which you ought to conduct yourselves hereafter;—not in regard to what you have already accomplished and encountered as professional students, but of what still awaits you as professional practitioners;—of your duties to yourselves, to your patients, and to your medical brethren.

There is one opinion of primary importance, because of primary danger to your fates and fortunes in life—yet an opinion that is I fear only too common amongst you—against the spell of whose blighting influence I would first beg to warn and guard you with all the earnestness of the most heartfelt conviction. Many of you imagine that, with the present attainment of medical honours, all your medical learning and labours are at once to cease;—that with your diplomas in your possession, you may henceforth banish all professional books and investigations from your thoughts;—that you leave these walls, not practical tyros, but proficients in every kind of professional acquirements. No idea could be more groundless and unsound—no error could be more fatal to your future prospects and future progress. This day is to be dated as the day of the true commencement, rather than as the day of the true consummation of your professional studies and exertions. It is, at best, but a momentary halt after the first and easiest stage in the journey of professional life; and your march onward must be one, not of diminished, but of redoubled energy and diligence.

The medical practitioner can never cease to be the medical student. His whole course, in fact, is, and must be a course of continued and accumulating instruction and research. The vast importance as well as the vast extent and rapid march of our profession demand it. During the period of your academic studies, we, as your teachers, have endeavoured to initiate you in all the more leading principles and details of medical science, but the elaboration of the work can be accomplished by no efforts except your own. We have laid in your minds a sure, and, as we humbly trust, a solid foundation of professional knowledge, but the superstructure we must leave to be finished and adorned by your own individual zeal—your own individual industry—and your own individual talents.

If there is, therefore, any single truth which you ought to engrave upon the table of your hearts more deeply than another, it is this—that if you aspire after professional distinction (and who amongst you does not?) you must assiduously enrich and extend your store of professional knowledge by continued and constant observation—reflection—and reading. Let no opportunities escape you of personally watching and studying for yourselves the diversified phenomena and results of morbid action and of remedies. And though you are henceforth to practise medicine as an art, and as a source of pecuniary emolument, still I beseech you, continue to look upon it and love it, and investigate every part of it with all the ardour and zeal of a science. Do not suppose—as has been often alleged—that the study of practical medicine as a department of scientific knowledge, is in any respect incompatible with the exercise of practical medicine as a department of professional gain. It is totally the reverse. The more you know of disease—the more deeply and enthusiastically you study its phenomena—the greater will be the interest which you will take in every ailment submitted to your charge, in every symptom of it, and in every change in it—an interest certainly altogether independent of, and immeasurably above the incentive of pecuniary reward, but one that is still in itself the surest ultimate road to that very result, because it is the surest means to bind you to your patients with all that zeal and all that devotion, that are so properly considered by the public as alone worthy of such reward.

In struggling onwards towards fame and fortune in the practice of your art, place from the first all your hopes of advancement upon the breadth and extent of your medical abilities alone. If any of you have the foolishness and temerity to trust for professional success to other means, be assured that you are embarking your hopes in frail and faithless vessels. I would advise no one amongst you to say, in the spirit of the ancient Cynic, unto princes, "Hold out of my sun;" but I would strenuously counsel you not on any account to look upon their smiles and favours as an only and all-sufficient light to guide your footsteps forwards. Rather walk by the steady light of your own lamp than by the more dazzling, but, to you, more uncertain lustre borrowed from that of others. The patronage of power and wealth may advance your prospects to some extent, but—without genuine professional talents—they can never advance you far, and they can never advance you with certainty. And let me strongly forewarn you against one frequent error. Young physicians often dream that by extending the circle of their private acquaintances, they thus afford themselves the best chance of extending the circle of their private patients. In following out this chimerical view, much invaluable time is frequently lost, and—what is worse—

habits of pleasure and indolence are often, with fatal effect, substituted for those habits of study and exertion that are above all price. No man will in any case of doubt or danger entrust to your professional care the guardianship of his own life, or of the life of those who are near and dear to his heart, merely because you happen to be on terms of intimacy with him. The self-interest of human nature forbids it. To have professional faith and confidence in you, he must respect you in your calling as a physician, and not merely in your character as a social friend and companion. The qualities for which he might esteem you in the latter capacity are often the very reverse of those which would induce him to confide in you in the former. The accomplishments which may render you acceptable in the drawing-room are not always those that would make your visits longed for and valued in the chamber of sickness and sorrow.

I repeat, therefore, that if you dream of making patients by making friends, you will utterly delude yourselves and damage your own prospects. By your undivided devotion to your profession, labour to create for yourselves a sound and just medical reputation—and that reputation will create for you patients. Make it thus an object with the public not so much to employ you for your interest and your advantage, as to employ you for their interest and their advantage. Commit your fortunes to your medical knowledge and talents, and not to any empty mannerism, or any servility, or affectation, or singularity of conduct. And do not suppose that you can promote your medical success by any other than purely medical pursuits. In proportion as you raise your reputation by any adventitious and extra-professional accomplishments and studies will you probably lower your chances of advancement as practical physicians. Such, at least, is the almost invariable verdict of the public. Give, therefore, your whole energies to medicine; and in its multiplied departments you will find "ample room and verge enough" for the most energetic as well as the most comprehensive mind. Place your faith in no extrinsic influences. Let your own professional character be the one great patron to whom you ever look for your professional advancement.

In entering upon the active duties of Medical Practitioners, form your earlier habits of business and study with anxious and watchful care.

Every man has the power of forming what habits he will. The same duties, however irksome in the first instance, when gone over resolutely and uninterruptedly day after day at the same time, are soon, by their mere periodic repetition, converted from tasks into fixed habits and sources of pleasure. Their non-performance at last, will, like their very performance at first, become matter of pain and disquietude.

The habits that you will individually form for the next few years, will continue engraven and impressed upon you for the remainder of life. Choose and constitute them, therefore, with the most solicitous care and anxiety, under the strong and certain conviction that they are for the future to be your great guides and companions, either for good or for evil;—for your success or your failure in the high duties and destinies of life.

Above all, teach yourselves carefully to save your time, and to methodize all your pursuits.

The two great commodities which the Physician carries into the mart of the world to barter for the goods of life, are his professional knowledge or advice, and his time. I have urged upon you to enlarge the quantity and enrich the quality of the former; and in order to accomplish this great object, let me now solicit you to save and economize the latter. Let your time be a property of which you are truly avaricious, and of every item of it be able to render to yourself a proper reckoning. It is by carefully preserving, conjoining, and making diligent use of these broken and disjointed portions of it, which others thoughtlessly waste and destroy, that almost all the highest reputations in the medical profession have been formed.

If any one amongst you will only assiduously save up every odd moment and otherwise lost item of it for the next twenty years, and properly use these gains, you will have snatched, from perhaps utter waste, time enough to work out for yourself almost any reasonable reputation that the emulous ambition of your heart may aspire after. You may thus have actually lived, at the age of thirty or forty, a life much longer than he who has already numbered his three-score years and ten. In one single particular, it has been calculated that the simple difference between rising at six and nine o'clock in the morning, for the space of forty years, is nearly equivalent to the addition of fifteen years to a man's life!

He who has the proper covetousness of time in his heart, will find out, during the remainder of the day, innumerable other opportunities of contributing to his own saving stock of it, by adding thereto many other moments and fragments which the world at large are profligately and recklessly casting away from them.

Never lull your mind into listless idleness by the self-deceit that you have no spare hours on your hands for this or for that professional pursuit. Look around the profession, and you will find that those who have most to do in the way of business as practitioners, have also apparently the most time to spare as observers and writers, in contributing to the literature, and advancing the knowledge both of our science and art. In their engagements with their professional brethren and others, they are as punctual as the shadow on the dial-plate. And why? Because they have all their daily duties properly assorted and arranged; they save from loss and destruction every possible fragment of time; and their very industry and precision procures them more true leisure than indolence can boast of.

Follow out, therefore, all your professional duties in a determinate order. Lay down each morning a plan for the business of the day, and adhere to that plan as far as your professional avocations will admit;—never postpone to a subsequent hour, and far less to a subsequent day, any duties which you may at the moment easily accomplish; —and above all, guard against allowing any incidental pursuits to encroach upon those that are strictly professional. Do every thing at its proper season, and you will have time to do every thing slowly and well. Have a duty for every time, and you will have time for every duty.

I have been advising you to learn not to fritter away your time. If your object be high professional distinction and success, let me advise you, if possible still more strenuously, not to fritter away your thoughts. It was long ago beautifully observed by Barrow, that "the spirits employed in thought, are apt to flutter and fly away, so that it is hard to fix them; our mind being a restless thing, never abiding in a total cessation from thought, or from design; and, like a ship in the sea, if not steered to some good purpose by reason, making no useful way, but yet tossed by the waves of fancy, or driven by the winds of temptation somewhither."

To make decided and useful progress in

our professional calling and pursuits as Physicians, we must have a perfect power of fixing at will these fluttering spirits of thought, and of steadily steering that "restless thing" the mind, in whatever direction we may desire. At all times, on all occasions, and amidst all the numerous disturbing influences to which the medical man is so constantly subjected, he should be able to control and command his undivided mental attention to the case or object that he may have before him. In the prosecution of any department of science, as well as in the practice of any department of art which, like Medicine, requires a constant exercise of observation, reflection, and judgment—the power and habit of closely and continuously thinking upon the subject in hand, to the exclusion, for the time, of all other subjects—is one of the principal—if not the principal secret of success. In the power of concentrating, and keeping concentrated, all the energies of attention and thought upon any given subject, consists the power of thinking soundly, strongly, and successfully upon that subject. The possession or the want of this quality of the mind constitutes the main distinction between the possession or the want of what the world designates—mental abilities and talents.

The intellectual vessel—if I may follow out the metaphor suggested in the words that I have just quoted from Barrow—is not so very different in different men in its original building and materials, as in the labour, care, and watchfulness, with which it is stored and fitted out by education for the voyage of life;—in the vigilance and skill with which it is worked and conducted onward in its progress over the rough sea of the world;—and, most especially of all, in the undeviating steadiness with which it is steered by the hand of discipline in steady courses of utility and importance, or allowed by idleness and neglect, to toss about at the mercy of every passing thought—ever in motion, but never moving in any direct or profitable track. Sir Isaac Newton, the immortal pupil of Barrow, whose gigantic genius and intellectual strength have since fixed upon him the admiration and wonder of his race, modestly averred, that his mental superiority, if any, consisted, in his own opinion, only of unusual powers of patient thought and industry. The unparalleled greatness in the results of his thoughts was owing, according to his own interpretation, merely to his habit of unparalleled endurance and assiduity in the exercise of thinking. With probably more truth, Dr. Armstrong observed, that "genius in a medical man is nothing more than the *habit* of patient observation and reflection." This habit of strong mental attention and concentrated mental activity, is one which all of you should struggle diligently to increase and improve,—and you may all increase and improve it;—for in every man the habit itself is more a conquest gained by self-discipline, than a quality conferred by nature;—it is more an acquired than an original power and attribute of the mind;—its varieties in different individuals are more the result of varieties in our mental education, than of varieties in our mental constitution.

Ever cautiously guard against either your mind or body being degraded into that most debasing of all slavery—the self-slavery of indolence. Do not vainly flatter yourselves, as is too often done by the young members of our profession, that, in the chances of our calling, fortune may, while you still repose in drowsy sloth and idleness, search *you* out in order to lay her gifts at your feet. To obtain these gifts you must arise and actively pursue *her.* Industry and diligence are the only offerings on your part for which either fortune or fame will exchange with you the riches of their rewards. No certain advance to a high professional standing can be made, except it be purchased by the free expenditure of such coin and currency.

If any of you ever come to speak of your expectations and prospects always withering under the evil eye of a luckless fate, be assured beforehand that you are only, in disguised terms, so far confessing to yourselves and to others your own apathy and misconduct. Misfortune and mismanagement are terms much more synonymous in reality than mankind in general will believe. In all our worldly pursuits, as in all our professional studies, we are liable to be conquered, more by our own supineness than by the difficulties of our undertakings—more by ourselves than by our subjects. You are each endowed with the proper elements of success, if you will only properly use them. If you labour honourably, diligently, and indefatigably in your calling, few or none of you will find cause for ultimate complaint. "Whatsoever thy hand findeth to do, do it with thy might." Do not wait for special and favourable circumstances, but work always as if special and favourable circumstances were already actually present. Do not withhold your blows till the iron is heated, but strike it till it becomes hot. Never spare yourselves in your efforts. The finished and perfect statue can only be elaborated from the block by hundreds and thousands of patient and assiduous strokes of the chisel. Your professional character and knowledge can only be elaborated by a similar course of unremitting diligence and labour. In medicine, as in other avocations, be assured that no man ever reached, and that no man ever can reach, great reputation and great excellence without great exertion. With the necessary exertion the humblest amongst you are certain to rise;—without it, the highest amongst you are as certain to fall.

In starting on the journey of active life, plant before your mind's eye an exalted standard of professional excellence, as a high, and, it may be, distant land-mark, which you predetermine to strain every nerve to reach. If you thus set an exalted mark before you, the very elevation of your aim will impart a corresponding elevation of tone and character to all your motives and actions. You may fail in entirely reaching the high goal before you, but the very effort to reach it will add to the vigour of your professional powers and reputation. You cannot all be Hunters and Bells, Cullens and Thomsons, Abercrombies and Alisons, but you may all be greater and more distinguished men than you otherwise would be, if you will hold their noble examples in view, and emulate their habits of indefatigable application and industry. And be not dismayed by apparent difficulties in the road to professional distinction. Let these difficulties not enervate, but rather stimulate you onwards with powers re-excited and sharpened by their very opposition. The timorous and irresolute only are intimidated and daunted by them. There are few or no obstacles that will not disappear before determined industry and intrepidity. Like shadowy and unsubstantial phantoms will they vanish from your path, if you have only the moral boldness to confront and grapple with them. They will fly before your steady and onward progress, as the "visible horizon flies before the advance of the traveller. A passionate desire and an unwearied will can perform impossibilities, or what seem to be such to the cold and the feeble. If you do but go on, some unforeseen path will open among the hills." The road before you to professional eminence may in some parts seem dangerous and forbidding, but it contains no obstructions sufficient to arrest or turn back the step of him who traverses it with a spirit of steady and settled resolution;—it may be long, but patience and perseverance are infallible passports through it;—and here, as elsewhere,—in yours as in other pursuits,—an indomitable determination to succeed is in itself the surest guide and conductor to ultimate success.

Hitherto, I have been calling upon you to enlarge and extend, by every means in your power, the sum of your professional knowledge, with a view to your own personal considerations and personal prospects. But there is another and a higher view under which I would beg to urge upon you the same considerations. You are to practise your profession now, not only under a sense of the duties which you owe to yourselves, but still more under a sense of the higher and heavier duties which you owe to your patients.

When the medical man first settles down in practice, he, by the mere act of this settlement, enters into a kind of moral contract with those who are to become his patients. They, on their part, agree to entrust entirely to his professional care and keeping, property which, to them, is greater than the riches of Crœsus—their health, namely, and their lives. He, on his part, pledges to protect and preserve for them these inestimable gifts, by all the best directed means that medical science has devised. Though it may be argued that

"It is not writ so in the bond,"

yet the obligation is not the less real. The contract, though silent, is not the less solemn. It is a grave and inviolable bond of duty and conscience on the part of the practitioner—one of faith and confidence on the part of the patient. See to it, therefore, that you are always prepared to fulfil perfectly and promptly your portion of the conditions of this important and rigorous mutual contract. Whatever is, under its seal, communicated to you as a matter of professional confidence, must ever remain buried within your own breasts in all the silence and secrecy of the grave. Whenever called upon for your aid, you are bound by duty, law, and honour, to obey the summons. If busied and immersed in any engagement, then must that engagement be instantly broken, unless it be purely a professional one. The time of the medical practitioner is at every moment at the command of every man except himself; it is not strictly his—it belongs to his suffering fellow-creatures. He is altogether, in effect, more their property than his own. And be ever waiting and watching, in full and complete readiness, for the heavy obligation of practical knowledge which your duty to your patients imposes on you. Keep your minds and thoughts always attuned to the exercise of your profession, and amply stored with every information that can be required. "*Erecti, citati, armati jam esse debemus.*" In all cases, your responsibility is great; in cases of doubt and danger, it often becomes fearfully so. The fellow-being whom you have persuaded to confide in you may then have his life saved by your professional knowledge, or sacrificed by your professional ignorance. Difficulties and sudden emergencies will constantly spring up around you. It is at these moments that you will find summoned at once, into full play and force, all the depth and soundness of your professional abilities and acquirements. Under such circumstances, it is only the *conviction* of a perfect knowledge of the nature and treatment of the case before you—as derived from a perfect previous study of, and acquaintance with it, in all its varied details—that can impart to your minds all that calmness of self-possession, and all that promptitude of decision and of action that the exigency may demand. It is such conviction alone that can properly direct and determine the measures of the physician, on those occasions, when the trembling balance of life and death is dependent on the very next step that he ventures to take. It is such conviction alone that guides and steadies the hand of the surgeon in those trying moments, when danger and death hover around every touch of his knife.

In the practice of your profession cherish and foster within your hearts a spirit of true benevolence towards your patients and fellow-beings.

Nature has happily ordained it as one of the great laws on which she has founded our moral happiness, that the performance of offices of love and kindness to others should be a genuine and never-failing source of pleasure to our own breasts. It is thus strictly as well as poetically true,

> "That, seeking other's good, we find our own."

So strongly, indeed, is the promotion by us of the weal and happiness of other members of the family of man not less a great moral obligation than a great moral gratification—not less our duty than our reward—that some metaphysicians have believed that all practical virtue is ultimately resolvable into practical benevolence.

The exercise of the profession upon which you are about to enter is, when followed out in its proper spirit, a continued realization of active beneficence, and in this view a continued source of moral satisfaction and happiness to the generous heart. The objects and the powers of your art are alike great and elevated. Your aim is, as far as possible, to alleviate human suffering; and lengthen out human existence. Your ambition is to gladden as well as to prolong the course of human life, by warding off disease as the greatest of mortal evils, and by restoring health, and even at times reason itself, as the greatest of mortal blessings. If I may borrow the beautiful language of the author of "The Village"—

> "Glorious your aim,—to ease the labouring heart,
> To war with death, and stop his flying dart;
> To trace the source whence the fierce contest grew,
> And life's short lease on easier terms renew;
> To calm the frenzy of the burning brain,
> And heal the tortures of imploring pain;
> Or, when more powerful ills all efforts brave,
> To ease the victim no device can save,
> And smooth the stormy passage to the grave."

I repeat it,—if you follow out these the noble objects of your profession in a proper spirit of love and kindness to your race, the pure light of benevolence will shed around the path of your toils and labours a brightness and beauty, that will faithfully cheer you onwards, and keep your steps from being weary in well-doing—while, if you practise the art that you profess with a cold-hearted view to its results merely as a matter of lucre and trade, your course will be as dark and miserable, as that low and grovelling lust that dictates it. I make these remarks in relation to your practice and conduct as individual members of the profession. No one can question that, in this country at least, the character of the purest benevolence must be accorded to our profession as a whole. "Go," says an eloquent writer, "into the abodes of the sick, and the poor and deserted; wherever there is disease or distress, there will you find some medical practitioner exercising his glorious art,—patiently, freely, and fearlessly, for those whom poverty or vice, or the breath of the pestilence has deprived of every other friend. Or, again, follow him among the higher classes of patients, and you will find him there the friend and honest adviser of those who can seldom hear truth from any other lips"—"ministering hope and comfort to the sick, reviving expiring life, or soothing the bed of death for the drooping spirit, by counteracting the depressing influence of those maladies that might otherwise rob the philosopher of his fortitude, and the Christian of his consolation."

I have spoken of the duties which you owe to yourselves, and the duties you owe to your patients. If the limits of the present address had permitted, I would fain now have added a few observations on your duties to your medical brethren. In no walk is the young Physician more apt to err, than in attempting to follow out the mutual rules of ethics and etiquette observed among medical men. The error may be from pure ignorance, and not from intention, but the verdict is always severe. Let me only state that here, as in other circumstances of life, you will find the beautiful and golden rule of—do unto others as you would have that others do unto you—universally applicable. And let me counsel you, "if it be possible, as much as lieth in you, live peaceably with all men." Never disparage the practice or the character of any one of your medical brethren;—never interfere in any way or on any account in the treatment of any patients except your own;—

and whatever you do or say in the exercise and conduct of your calling, do it as if the eyes of the whole profession saw you,—speak it as if all their ears heard you.

On this matter permit me to add one word more :—ever guard against allowing feelings of professional invidiousness to instil their canker into your soul. The gifts and rewards of the profession may be occasionally awarded by the public with injustice; but such adjudgment is certainly the exception and not the rule. If another happen to outstrip you in your professional course, let it rouse up within you, not a spirit of malicious envy, but a spirit of generous emulation;—let it lead not to feelings of repining and to relaxation in your efforts, but let it rather urge you onward with a stronger and more determined energy of action. Whatever ground you do gain, gain it by fair and open competition. Never allow the darker part of your nature to persuade you to the attempt of overtaking him who has distanced you in the race of life, by any unjust efforts to lame the character, and thus diminish the speed of your adversary. And if such attempts are made by others upon you, have no dread of them—if you are armed strong in honesty—if you have pursued—what every man who respects either his own honour, or the honour of his profession must always pursue—a line, namely, of irreproachable truth, and unbending rectitude of conduct. "Be thou as pure as snow, thou shalt not escape calumny." In as far, however, as regards your personal feelings, the self-knowledge of your own pure uprightness and integrity will always serve you as an impenetrable panoply—*robur et aes triplex*—against the most sharp and cunning shafts that others may choose to aim at you;—the self-approval of your own conscience will be always to your own heart an infallible antidote against their poison;—and, again, as far as regards your worldly interests, rest assured of this—that the world itself will seldom or never allow you to suffer from any unjust attacks uttered by the tongue of professional slander—or from any false detractions dictated by a mere spirit of crooked malice.

In recommending you, as I have now

done, to cultivate earnestly, for your own professional reputation, and your own personal happiness, the higher intellectual and moral qualities of your nature, do not suppose that I ask you to accomplish what is *beyond* the might and compass of any one of you. All of you possess the requisite elements and powers for doing so; it is only necessary for you to exert them properly. All of you may so cultivate your minds, as to become useful and distinguished members of your profession. All of you may so cultivate your hearts, as to become virtuous and honoured members of society. Certainly neither the one object nor the other can be attained without vigorous efforts and resolute self-discipline on your part; but in these very efforts, and in that very discipline and its results, will you find for yourselves, a pure and constant well-spring of intellectual and moral enjoyment. The most certain path to happiness is the path of action and duty.

But I have already detained you too long with these rambling and desultory remarks.

I will not venture to encroach further upon your time and patience, though the subjects I have already adverted to would of themselves require hours and days—not minutes, for their proper consideration and discussion. In the mean time, however, I must have done. The fetters of academic discipline are now—and for ever—to be struck from you. You are about to pass from the closet of the student into the busy and bustling scenes of active life. The great city of the world is already throwing open her gates to receive you. Through that city you must now pass, "whether through its darkness or its splendour—its profligacy or its virtue—its misery or its happiness; and in it, all the honours of time and of immortality are to be gained or to be lost." The avenues to its temples of fame and happiness are as open to you now, as they ever were to any of your predecessors. The approaches to them are, as heretofore, beset on either side by ten thousand temptations. Pursue earnestly and undeviatingly the direct course of Christian and professional duty, and then you need fear not. But tremble if you allow yourself to be drawn aside from it at any one point. Temptations that may at first lure you from your path with the gentle touch of a grace or a pleasure, will—if yielded to—soon hold you with the iron grasp of a giant. Your future career is a matter of your own selection; and will be regulated by the conduct which you choose to follow. That career may be one of happiness or of self-regret—one of honour or of obscurity—one of wealth or of poverty. During it the present fond hopes of professional fame and fortune that breathe in the breasts of all of you, may be won or lost—may be fulfilled or falsified—may be nobly realized or ignobly ruined.

The one or other result is, I repeat, not a matter of *chance*, but a matter of *choice* on your part. Your diligence and industry for the next few years of your life will almost inevitably secure for you the one:—your apathy and indolence will almost inevitably entail upon you the other. May God in His infinite goodness enable you to select the wiser and the better path; and may you ever be found asking for and relying upon the arm of His omnipotence, as the only sure and steady guide of your footsteps through it; so that, when the journey of life is drawing to its close, you may have it in your power to look—backwards upon time without remorse, and forwards upon eternity without fear. Such at least is the earnest and sincere hope of my Colleagues and myself in sending you out into the world as Practitioners; and such is the heartfelt wish and prayer with which I must—in as far as regards your official relations to us as Students—now bid you—Farewell.

II.—ON THE PROSPECTS OF YOUNG PHYSICIANS.

AN ADDRESS TO THE NEWLY MADE MEDICAL GRADUATES OF THE UNIVERSITY OF EDINBURGH, 1ST AUGUST 1855.

GENTLEMEN—It falls this year to my lot to address to you a few valedictory remarks, on behalf of my professorial brethren and myself, before we now separate—and separate for ever—as professors and pupils. These remarks, however, will be brief; as I know your impatience to be set free from this—the last and only remaining link in the chain of academic restraint. For, though it be true that the absolute shortness of human life is a constant and common theme of regret, yet it is equally true, that all of us anxiously press and hasten from one step and stage of human existence, upward and onward to the next, sorely begrudging, in this railway race of existence, all detentions and delays. You are to-day arrived at what is perhaps the most important station in this journey, for you have now reached, and are about to cross, the great boundary-line between the light academic life of the young student, and the hard practical life of actual manhood. Ere you pass this line, however, allow me, in right of my office as your Promoter, to stand athwart your path for a few minutes, and speak of the prospects, and of the objects and obligations which await you on its further side, as medical practitioners.

And, first, let me venture to warn you, in all kindliness of spirit, that the bright and brilliant hopes which some—which perhaps most of you—entertain of rapid and almost immediate success in medical life, are, I fear, doomed to certain failure. I speak specially of the Graduates among you who are about to engage in civil practice; and these constitute a vast majority of your number. For the painful trammels and degrading neglect to which medical officers in the public services of the British army and navy are still so discreditably subjected, are such as debar and deter men of ability and independent spirit from permanently joining their ranks. Besides, even the very highest grades of the public medical service, are scarcely in themselves objects of honourable ambition. The gentleman who is at this moment at the head of the medical department of our great army in the East—a physician, I believe, of high talents and energy, Dr. Hall—undergoes all the enormous responsibilities and work of that office, and all the enormous abuse and obloquy too, connected with the discharge of it, for a salary of two guineas a day—an income far less than that made by many a second or third rate village apothecary in England. Most of you, I repeat, are destined for civil practice; and again I warn you, that, as the general rule, such practice rarely or never comes speedily, in a pecuniary form, to the young physician, however high his aspirations, and however great his talents may be. The same fact holds true of most other professions and trades; but it holds, and has ever held, especially true of medicine. We have little or nothing on record to unfold to us the secret history of the early struggles, trials, and difficulties of medical practitioners, except in the published biographies of a few of those men, whose supreme talents have ultimately carried them to the very foremost rank in their profession. The history of these princes and chiefs of the medical art is, in every known instance, I believe, an illustration of what I allude to—the slowness and difficulty with which practice, or at least remunerative practice, gathers around the door of the young physician,—especially in our larger communities and cities. A former graduate of this University, Dr. John Cheyne, who, a quarter of a century ago, was by far the busiest and best employed physician in Dublin, tells us in his interesting autobiography, that during the first half of his second year's settlement in the Irish capital, and when he had already reached the thirty-fourth year of his age—(an age which it will be long before some of you yet attain),—his fees only amounted to about three guineas. Nine years subsequently, he was making

£5000 annually. Not above one or two physicians in London ever drew, I believe, a larger professional income, or perhaps ever advanced more early into full practice than Dr. Chambers; yet, during the fifth year of his practice, when he was already thirty-four or thirty-five years of age, he did not receive above £211 in fees. Seventeen years subsequently, his annual professional income is stated to have reached nearly to £9000. His great predecessor in high London practice, Dr. Matthew Baillie, drew above £11,000 in one year; and yet with all the interest of the Hunters and others, to aid him in his outset, his first march upwards was, like that of all others, very slow and difficult, and to quote the words of his biographer, Dr. Wardrop, before "he found himself fairly established in practice," he had been already for twelve years physician to St. George's Hospital, and for nearly twenty years a medical lecturer. Dr. Baillie's uncle, the celebrated Dr. William Hunter, who spent a large fortune, gained by his profession alone, upon the collection of that splendid museum which now

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enriches the University of Glasgow, was so hard-pressed for money during the years of his earlier struggles in London practice, that he was obliged to postpone for a fortnight the commencement of his third season of lectures, in consequence of not having money enough to pay the expense of the usual class advertisements. Nor have our greatest surgeons been usually more successful than these our greatest physicians, in the first stages of their professional career. In 1788, the son of an English clergyman attended the medical classes of this University, and lived on the third flat in Bristo Street, in a room which cost him six shillings and sixpence a week. In after life, when swaying the surgical sceptre of England, as Sir Astley Cooper, his professional income, in one single year, amounted to £23,000; and yet, during the first twelvemonths after he settled down in London, and was working as a lecturer on anatomy and surgery, his receipts from private practice only amounted to five guineas. The distinguished surgeon, who, by Sir Astley's death, was left at the head of the surgical school of London, Sir Benjamin Brodie, did not, as we are told, in a late biographical sketch of him, get into "full practice" till 1825; yet he had been lecturing, practising, and publishing since 1805, or for twenty long years previously. "I well remember," observes Sir Benjamin, in one of his published works, and when speaking of the early struggles and disappointments of young medical practitioners, "I well remember, in relation to myself, how often, in the intervals of occupations, I have contemplated, with something like dismay, the prospect which lay before me." Almost all medical men have, I believe, had occasion, in early professional life, to participate more or less deeply in that feeling. All my medical colleagues around me, will probably, like myself, be ready to subscribe to the truth of the observation, in their own individual instances. No doubt, also, fate holds in store a similar destiny for you. And, if a period of probation and trial is thus ready to meet you at the outset of professional life, be you also ready, with brave and stout hearts, to meet it.

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This impending period, however, of watching and probation, cannot and dare not be with you a period of rest and idleness. On the contrary—if you do not wish to sink into low mediocrity—your pursuit of medical knowledge, during this period, must be increased instead of diminished, quickened instead of slackened. It must be, in truth, a term of fresh and fervent professional study—of earnest and manful professional work. For, during it, you have to confirm and correct and—still more—to extend and enlarge your present stock of information, on a thousand different points, and in a thousand different directions.

In the practice of some ancient continental universities, it was formerly the custom to present the medical Graduate, on the day on which he gained his doctorship, with a ring, a [illegible], an open and a shut book. The ring betokened the solemn espousals of the young [illegible] the medical profession. The [illegible] indicated that he was, at the same [illegible] set apart and consecrated [illegible] The open book [illegible]

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above all, to familiarize yourselves practically, and by incessant study and experience, with the actual phenomena and treatment of diseases. And do not argue yourselves into indolence, and the neglect of this, on the plea that you, forsooth, can have no proper opportunities of doing so. An active heart and a willing hand, will ever find plenty of work to do. Wherever you may settle down in this world, you will have around you abundance of the sick poor. The professional care and charge of them has always been the heritage of the young physician; and when viewed in all its bearings, it is a rich heritage too. Amid them or others, you must render yourselves familiar with all the many unteachable items and details of actual practice; and you will elaborate and extend the practical knowledge of your profession, as well in attendance upon the pauper as upon the millionnaire. For in the richest of your patients, you will find, after all, only a sick brother man; and the poorest patient, for whom you will ever prescribe, is—nothing less, and nothing more.

There are other matters pertaining more personally to yourselves, which you have specially to attend to during the next few years of your professional probation and preparation. You have, each of you, to endeavour, as far as in you lies, to mould and form your moral and intellectual characters, both as men and as physicians, so that you may be able to discharge, with all possible happiness to yourselves, and with all possible profit to your patients, the personal duties connected with your professional calling. In all your communings, either with your own hearts or with the world, in all your intercourse with men, and books, and nature, strive to cultivate and strengthen every good principle and qualification that can adorn the character of the true physician,—application, energy, self-reliance, gentleness, cheerfulness. On the other hand, search out, each of you, in a faithful and humble spirit, your own individual faults and deficiencies of character (for who amongst us is free from them?) and early and earnestly strive to correct them. In the language of Chilo, "Man, know yourself!" and again, in the language of a far higher authority, "Physician, heal thyself!" Uproot in your mental characters and habits whatever is evil, and try to replace it with whatever is good. Remember, the garden of the mind is always certain of itself to grow weeds, if you do not train it to grow flowers.

The profession which you have this day espoused, is, as I have already strongly stated, beset with early struggles and difficulties; but it is one also in which, to quote the words again of Sir Benjamin Brodie, "no one who uses the means proper for the purpose, will fail to succeed sufficiently to gratify a reasonable ambition." "You must," he adds elsewhere, "persevere, and you may do so in the full assurance that the reward will come." Medicine, however, is not a profession which almost ever leads to the actual accumulation of very great wealth. Large fortunes are rarely made in it; far more rarely, I believe, than in any other profession or trade which it is possible to name. If the ambition and object of your hearts, therefore, is the mere acquisition of money, then throw your newly won medical honours aside, and go at once to the mill or to the mine—to the counting-house, or to the exchange. They offer far more sure and ready avenues to hoarded wealth than medicine does. But surely the secret of a human being's usefulness and happiness in this life does not really consist, as many seem to fancy, in merely accumulating money. There are other objects and aims far more noble, and far more worthy of the gifts and powers which God has given you in trust. You are educated and destined for higher work, and for holier uses and purposes, than the greedy grubbing up of gold, either out of earth-holes at Ballarat, or out of the pockets of your patients. You have undertaken to-day—and for life-service too—a charge and a commission of far more honour and dignity to yourselves, and of far more moment and importance to your species. All, I believe, will willingly grant that the clerical profession stands in unspeakable importance above the medical, and above all other professions, inasmuch as the interests of the soul are infinitely more momentous than the interests of the body, and the concerns of eternity infinitely more weighty than any concerns of time. But the profession which you have this day adopted, is, in many respects, the most important secular profession which a man can possibly follow. Its importance depends upon the priceless value of the objects of the physician's constant care and study, viz., the guardianship of the health and of the lives of our brother men, and the defence of the human body and human mind against the attacks and effects of disease. Other pursuits become insignificant in their objects, when placed in contrast with this. The agriculturist bestows all his professional care and study upon the rearing of crops and cattle; the merchant spends his energies and attention upon his goods and his commissions; the engineer upon his iron wheels and rails; the sailor upon his ships and freights; the banker upon his bills and his bonds; and the manufacturer upon his spindles and their products. But what, after all, are machinery and merchandise—shares and stocks—consols and prices-current—or the rates of cargoes and cattle—of corns and cottons—in comparison with the inestimable value and importance of the health and the very lives of those fellow-men, who everywhere move and breathe and speak and act around us? What are any, or what are all of these objects, when contrasted with the most precious and valued gift of God to earth—human life. And what would not the greatest and most successful followers of such varied callings give out of their own professional stores, for the restoration of health, and for the prolongation of life—if the first were once lost to them, or if the other were merely menaced by the dreaded and blighting finger of disease?

Medicine has, I repeat, no large promises of wealth and fortune to offer to its votaries. Nor can it profess, either, to attract followers to its standard by the hopes of heraldic ranks and titles, or the glitter of coronets. If your souls long after such worldly honours, then leave the sick-room and hospital-ward, and go in search of them where they are alone to be found—in the senate-room, in the forum, or in the camp. You may have a chance—though not a very great chance—of obtaining such an object, if you will successfully devote your life-blood and energies to serve or mis-serve your country in connection with any leading political party—it matters not which, as all are uppermost by turns. Or if, as a lawyer, or rather as a law-pleader, you will particularly distinguish yourself above your fellows, so as to

> " . . . . . . make the worse appear
> The better reason, to perplex and dash
> Maturest counsels ;"

then, betimes the ermined gown of the judge may bedeck your shoulders. But, above all, perhaps, the easiest and surest path at this moment to a corner in the peerage book is, for a man to destroy diligently and successfully, as a soldier, as many as possible of his fellow-men. These, and other such deeds may gain for you, in this world, nobility and titles. Medicine, at all events, has no such bribes to offer you ;—and perhaps it is fortunate, after all, for the purity and character of medical science, that it is so. Yet, does it not seem strange in the abstract, that such should be the settled practice of a community generally reckoned civilized, such as ours? In these stirring times, for instance, when there are ringing, ever and anon, in our ears, the sounds of distant battle, and when the minds of young and old are carried away by the

> "Pride, pomp, and circumstance of *glorious* war,"

look for one single moment at the respective claims upon the gratitude of human nature pertaining to the profession of arms and to the profession of physic. And let me cite their relative worth and work in the words of one who belonged to neither of these two professions:—

"How striking is the contrast," says Robert Hall, "betwixt the art of medicine and the art of war! The last of these, war, has for its object the destruction, the first the preservation of the species. The mind of the warrior teems with the machinations of ruin, and anxiously revolves, among different schemes that present themselves, which of them shall scatter destruction to the widest extent, and with the surest aim; his progress is marked by devastation and blood, by depopulated fields and smoking villages, and the laurels that he wins are bedewed with the tears of widows and orphans. The acclamations which he wins from one portion of his species, are answered by the curses and execrations of another; and the delusive splendour, the proud and imposing array with which he continues to gild the horrors of his profession, are but the pomp and retinue of the King of Terrors. The art of healing proceeds (with a silence and secrecy, like the great processes of nature) to scatter blessings on all within its reach; and the couch of sickness, the silent retreat of sorrow and despair, are the scene of its triumphs." "The mind of a physician," Mr. Hall further observes, "is continually pregnant with expedients for the mitigation of pain, the extinction of disease, and the prolongation of life;—a course of thinking which fails not to cultivate and mature the seeds of benevolence. His success is in exact proportion to the benefits he imparts; and his triumphs are signalized by the tears of gratitude, the gratulations of friendship, and the raptures of returning health."

To these eloquent remarks, let me only add, that even in the two relative competitions by the soldier and the physician—the one for the destruction, and the other for the preservation of the lives of his fellow-men, the efforts of medicine have immensely outstripped the efforts of war.

During the last year there have died directly in battle, or from the effects of war, on the banks of the Alma, and within and around Sebastopol, perhaps some 80,000 or 100,000 men. But among the population of the four principal nations engaged in the present war, one single medical discovery—vaccination—saves from otherwise certain death, in every single year, more than double that number of human lives. Indeed, a single drop of contemned cow-pox matter, with its infinite power of multiplication, is far more potent to save human life, than all the war-implements and inventions, contained in all the arsenals and citadels in the world, are potent to destroy it. For making a discovery, by which the lives of tens and hundreds of thousands of his fellow-men have thus been, and continue to be annually saved, the Parliament of Great Britain grudgingly rewarded Dr. Jenner—first with ten, and then with twenty thousand pounds. But if, on the contrary, any soldier should at this moment discover a means, or so exercise the present powers of his art, as to destroy effectually, by one fell swoop in war, even fifty or a hundred thousand human lives, he would doubtless be in a very fair way to obtain the coronet and pension of a Baron or an Earl; and if the human slaughter which he committed were only doubled, or at all events trebled, probably a Marquisate or a Dukedom might be his award. Yet how true and terse was the letter of the old Syracusan physician, Menecrates, to King Philip of Macedon: "It is," boldly wrote that disciple of Esculapius to the royal warrior, "it is your work to kill men; it is my work to save them." And, begging the pardon of our military friends, I stand here and maintain, that the profession of

Menecrates was, and is, a more exalted and a more glorious profession than that of Philip?

The great majority of the newly-made physicians, forming your ranks here to-day, are natives of Europe, and of the British islands. But among your numbers are also Graduates collected from many other different parts of the world—from America, from Asia, and from Africa.[*] To this University, situated though it be almost on the uttermost verge of Europe, these gentlemen have come, in search of medical education and medical knowledge, like (if I may use the words of Milton)

> "Embassies from regions far remote
> In various habits; . . . .
> . . . . . Some from farthest south
> Syene, and where the shadow both way falls;
> Meroë, Nilotic isle; and more to East . . . .
> From India and the Golden Chersonese."

To all of these strangers and natives of other lands, I am sure that you, Mr. Principal and Colleagues, will willingly join me, both in offering our best congratulations on the medical honours which they have this day won, and in wishing them a safe and happy return to those distant homes and hearths, where the warm welcome of many a dear relative and fond friend impatiently awaits them. But there are also, among these strangers and sojourners at our University this year, some young graduates who do not belong even to the same section of the great family of man as we ourselves do.

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[*] On the occasion on which this address was given, there were seventeen Graduates from America, Asia, and Africa.

We have all of us, for example, rejoiced on this occasion, to welcome here to the "*summi honores medicinæ,*" one who has come to study medicine from a distance of some 15,000 or 20,000 miles; from a kingdom the most marvellous in the world—a kingdom which, at this present hour, contains within its enchanted wall, one whole third of the living human race; from a community that has remained in nearly the same state of strange stereotyped civilization for the last twenty or thirty centuries, and that knew of the mariner's compass, and small-pox inoculation, long, long before these great truths were dreamed of by the learned in Europe; from an empire that was comparatively advanced in various useful arts and sciences, and in medicine among the others, in those far distant times, when Julius Cæsar first invaded Britain, and when *our* rude and savage ancestors in these islands were still tattooing their skins with woad, and offering up human sacrifices at the stones of the Druids.

The high station which Dr. Wong Fun has won for himself among you, as a most meritorious and modest student, and the high prizes and honours which he has carried off, when he descended with you into the arena of competition in the class-room, afford us every hope that he, the first Chinese, I believe, who has ever graduated at a European University, will form, among his countrymen, a most able representative of the medical arts and sciences of the Western World. I am sure that all of us—professors and graduates—do feel an additional interest in his future career and welfare, seeing that he returns to his own distant home, not as a physician merely, but also as a Christian Medical

Missionary; seeing that he carries back with him, not merely a full knowledge of modern European medical science, but carries back with him also—like other messengers of yore, out of the East—"glad tidings of great joy," to scatter among his three hundred million of countrymen. And may God, in his providence, protect and prosper him in his mighty and magnificent mission.

There are further, among your ranks today, several natives of a kingdom, which claims an antiquity higher even than that of China. Nor amidst the numberless other marvels and glories for which Egypt was formerly famed among the ancient nations of the earth, must we forget that not the least of its many claims for distinction, was the great number, as well as the high character of her physicians. Several of the oldest Greek and Roman poets and writers, from Homer and Herodotus, down to Pliny and Diogenes Laertius, allude, in marked terms, to the highly advanced state of the healing art on the banks of the Nile. In the Odyssey, Egypt is described as a country where every physician possessed knowledge above all other men, for

> "...... their patron god imparts
> To all the Pharian race his healing arts."

"All places in Egypt," says the Greek father of history, "abound in physicians;" and Plato, when sick and invalided during his travels in that country, is averred to have found almost every Egyptian skilled in the healing art.

But in this, as in other respects, a spirit of change and of desolation has, for ages, smitten that devoted land. In accordance with its predicted doom, its twenty thousand cities have fallen, and the land has been made "destitute of that whereof it was full." When your co-graduates, Dr. Badre—(who, my colleague Dr. Traill informs me, very nearly carried off, a few days ago, his highest class prize)—Dr. Katib, Dr. Mustapha, and Dr. Soubki, return, as they shortly will do, to their native land, we trust that their remembrance of the ancient glory of Egyptian physic, will prove one incentive to them, among others, for labouring assiduously and earnestly, to diffuse a knowledge of modern medical science among their countrymen. And let us fondly hope that, under their patriotic exertions, and under those of their future successors, happily fostered by the patronage of the Egyptian government, the state of medical science and medical art in the ancient kingdom of the Pharaohs and Ptolemies, shall become gradually renovated and restored, so that betimes Egyptian physic may, after a long sleep of centuries, rise again—like the fabled Egyptian Phœnix—from its ashes, and become reanimated with new life, and strength, and vigour.

But I have detained you too long. The moment of our final separation as teachers and students is more than come. I dare not detain you longer from the work that awaits you in the world without. In pursuing and searching out that work, those assembled here now, will speedily be scattered to their relative fields of labour, over many and distant regions of the world. For wherever man dwells—in the crowded city or solitary cottage—in the rich palace or desolate tent—Azrael and his ministers of bitterness and death are sure, sooner or later, to take up their abode with him. Wherever man flies—to whatever corner of this wide earth he tries to escape, bodily sorrow and sickness still unrelentingly pursue him. To you he earnestly appeals for help and succour against these enemies of his life and happiness. And we now send you forth from these Halls, authorized by the diplomas which you hold in your hands, to administer to him, under his afflictions and sufferings, all the relief which the most advanced resources of medical science are able to impart. We despatch you as Argonauts across the rough sea of life—not in search of a shadowy golden fleece—but with a far higher and holier commission, viz., to carry hence the rich and blessed gifts of medicine to all ends of the habitable globe;—to give, as humble agents under a Higher Power, ease to the agonized, rest to the sleepless, strength to the weak, health to the sick, and sometimes life to the dying;—to distribute everywhere freely a knowledge of those means that are best fitted to defend our fellow-man against the assaults of disease, and to quench within him the consuming fire of sickness;—to close his wounds, and calm his cries of pain and anguish;—often to upraise his hopes when his heart is drooping and downcast, and sometimes to elevate him again to the dignity of humanity, when humiliated by the bereavement of reason;—to assuage at least, and alleviate his maladies and miseries when it is beyond the pale of art either to remove or remedy them;—ever to soothe even when you cannot save;—always to be guardians of his health, and often arbiters of his fate. And take with you the fervent hopes and prayers of my colleagues and myself, that every success and every happiness may attend upon you in the discharge of these—the sacred and solemn objects and obligations of your future lives.

III.—ON THE MODERN ADVANCEMENT OF PHYSIC.

PRESIDENTIAL ADDRESS TO THE EDINBURGH MEDICO-CHIRURGICAL SOCIETY, 5TH JANUARY 1853.

Gentlemen—My first duty, in taking the Chair as President of the Medico-Chirurgical Society, is a pleasant duty. For necessarily it consists in returning you my heartfelt thanks for the honour which you have bestowed upon me in electing me to this distinguished office. Believe me that I feel in no small degree flattered by this, as I have been in many previous instances, by the constant courtesy and unvarying kindness of you—my fellow practitioners—towards me. And any Scotchman may, indeed, well feel proud at being elected to preside over this society, as at once the largest and the most active medical association in this country.

On the utility of such societies as the Medico-Chirurgical Society, it is quite unnecessary to dwell. Their advantages have been described to you by some of your former Presidents in terms far more clear and emphatic than any that I could hope to employ. And I believe that at the present time there exists but one opinion in relation to the fact, that the study of medicine, like the study of other departments of practical science and art, has been vastly promoted by associations like our own. For all are ready to acknowledge, that the stimulus of mind upon mind, like the friction of iron upon iron, tends, in associations like this, to sharpen and strengthen all those intellectual faculties that are best calculated to promote our professional knowledge, and to develop the higher types of professional character; inasmuch as our mutual intercourse, criticisms, and discussions, form at once a school and an ordeal, teaching all of us constantly to become more zealous watchers of the medical phenomena occurring in our practice—more careful in our observation and classification of these phenomena—and more rigid in drawing correct deductions and generalizations from them.

None of us can plead guiltless to the occasional influence of that besetting sin—indolence; and all will further, I believe, willingly confess, that sometimes its best cure has consisted in visits to such societies as this, where the mere spectacle of other members actively at work has often stimulated us onwards to renewed efforts, and perhaps aroused within our breasts a commendable desire to imitate the professional industry and professional zeal of our neighbours. Few of us have ever on any occasion attended at this society without hearing some new professional fact, or some new professional idea, calculated to arrest our attention, and destined perhaps to give us a new and increased interest in some particular disease, or in some particular points in pathology or therapeutics. Societies, in short, like this, stimulate their members onwards by a kind of intellectual contagion; and as the human mind is swayed powerfully by imitation, we feel ourselves, in such associations as the present, often infected by the love of work, and the desire of extending professional knowledge, by having a constantly recurring opportunity of watching and witnessing these qualities manifested in the acts and in the ardour of others.

Such associations as this society, banded together for the mutual cultivation of professional knowledge amongst its members, and the general advancement of medical science and medical art, have principally sprung up here and elsewhere within the course of the present century. Numbers of the most valuable professional essays, and even larger works, that have been published within the last fifty years, have originated in communications to some one or other of our medical societies. Many of these essays and works would certainly never have been written but for this simple origin. And, doubtless, the progress that the healing art has made, during that period, has been in no small degree owing to the stimulating and regulating influence of medical association.

In making this observation, I take it for granted that medical science *has* advanced greatly during the last half century,—that is to say, within the period that the Medico-Chirurgical Societies of London, Edinburgh, and similar institutions elsewhere, have been at work. Ever and anon we hear it doubted, by men both without and within the profession, whether medicine has made any marked progress at all during the period that I speak of. Most of us have heard it broadly insinuated that, while other departments of science and art have, during the last fifty or sixty years, been marching forwards at a pace previously unprecedented in their history, the art of healing has remained comparatively stationary. The late numerous and marvellous strides made in practical science are generally dated as commencing with the time at which our illustrious countryman Watt discovered, or rather re-discovered, the steam-engine; or since he and others taught mankind to subdue and harness that mighty but docile monster to different kinds of machinery, and trained it to accomplish for the human race, works which seemed formerly beyond all human powers and all human hope. The resultant wonders of the steamboat and of the locomotive are inventions of the last thirty or forty years. And whilst, with the swift rush of the iron horse, our inert bodies are now carried from place to place with the speed of the bird, modern science has, of late years, achieved a still greater feat, for it has given us the means of whispering our very thoughts to the distance of tens, or hundreds, or thousands of miles—along that still more wondrous railway—the railway of the mind—the electric telegraph. The calculus of the mathematician, and the telescope of the astronomer, have lately proved to mankind that worlds, hitherto undreamt of, circle round our sun. And amidst the thousand startling discoveries and revolutions accomplished during the last half century by the science of chemistry, no application of that science is perhaps more strange than the fact, that the chemist has taught the artist to convert that sun himself into a marvellous and matchless painter, who can elaborate the most difficult portraits, and the most complex landscapes and figure pictures, with a precision and minuteness unattainable by human art,—and with a rapidity so great, that if properly tasked, he could finish countless galleries of them, in a briefer space of time than is occupied by one single dip and dash of the brush of a mortal artist.

But within the same wondrous period of progress during which these brilliant discoveries have been taking place in other departments of art, medicine, we can confidently maintain, has been by no means stationary. On the contrary, it has advanced by strides as marked and as great as those belonging to any other department of art taken individually. During the period I allude to, its progress has been in various directions and under various forms. To prove this statement, let me, in the way of a retrospect that may prove both instructive and encouraging to us, endeavour to recal to your recollections some of the principal advances and changes that have taken place in the more practical departments of physic and surgery since the commencement of the present century, or since the era of Watt's discovery. Of course, I must allude only to the principal amongst these advances and changes in such a limited address as the present. Nor in such a rapid review as I propose could I venture;—even were I able—to discuss, however briefly, the almost boundless alterations that have occurred within the period in question in some of the accessory branches of medical study;—as, for example, in chemistry—a science, the very language, and almost the very nature of which has become entirely revolutionized within the last half century, under the guidance and sway of the atomic theory. Physiology, another of the great bases of scientific medicine, has during the same time gained enormous additions—not in the way of any very high general fact—but in a far more clear, accurate, and searching view of almost all the principal points and questions that fall within the pale of its investigations. Even anatomy itself has strangely altered and advanced within the same limited era; for some of its departments—as that of embryology and the laws of development—are altogether of modern date;—the study of general anatomy and the classification of the tissues commenced with the present century; of still later date are the beautiful doctrines of morphology of type in different organs, and of homology of plan in different parts;—and lastly, the highest generalization ever yet made in philosophical anatomy is a work also of our own days, namely—the discovery that almost all, if not all the component elements and tissues of the human body, and of the bodies of other organized beings, do either virtually consist, or have originally consisted, of nucleated cells.

In the proud progress effected in these and in other accessory preparatory departments of medical science, we have abundant proof of advancement as marked and as rapid, I believe, as can be readily found in any other branches of theoretical knowledge. But, as I have already stated, it is of the evidence of the advancement of medicine in its more *practical* departments and details only that I intend to speak in the present address, in order that we may thus trace and study together for a few minutes, some of the different steps of its modern march, and some of the principal victories which it has latterly achieved as a practical art.

Several departments of medical science bearing directly upon the art and practice of physic, and which were previously comparatively unknown, have in a manner arisen during the last fifty or sixty years,—or at least have been first systematized or generalized within that period. At the present day we can scarcely appreciate the vast importance of some of these, and the advantage which a knowledge of them gives us as practitioners over the cultivators of medicine half a century ago. Nor, perhaps, would it be possible to see and appreciate them in their proper value, unless we were actually again re-deprived of their aid—in pathology, diagnosis, and practice—and unless all the knowledge and advantages springing from them came to be suddenly obliterated and blotted out.

I. Pathological Anatomy, for example, belongs in a great measure to this category. It is quite true that morbid anatomy was known, and in some degree appreciated, before the time I speak of, in the same way that the steam-engine was (as I have already hinted) known before the time of Watt. But it is equally certain that it is only during the last forty or fifty years that pathological anatomy has been so studied as to assume the importance of a leading and indispensable branch of medical knowledge.

In such a society as this, it is, I believe, most unnecessary to dwell upon the advances made in medicine and surgery by the cultivation of pathological or necroscopic anatomy. And its uses have been various. By its light new diseases have been discovered, which were formerly all but unknown; such as emphysema of the lung, œdema glottidis, phlebitis, ramollisement of the brain, endocarditis, melanosis, etc. In other instances, it has enabled us to separate into specific diseases some affections which formerly were constantly confounded together, both in diagnosis and treatment, as the different species of inflammation of the lungs—pleurisy, pneumonia, and bronchitis; the different diseases of the heart; the different forms of tumours, etc. In another range of its investigations, it has been the happy means of enabling us to study and trace accurately the general courses which inflammatory, tubercular, carcinomatous, and other such diseases are liable to follow, as well as the varieties that they are liable to present in different organs of the body. It has changed and corrected our ideas of the nature of some maladies, by shewing us, for example, that acute hydrocephalus, which was formerly supposed to be an instance of pure dropsy, is generally the result of inflammatory and acute tubercular disease; that the old nosological dropsies of the chest are almost all instances of disease of the heart; that the so-called fungus of the testis is an inflammatory and curable, and not a malignant and incurable malady; that the gangrena senilis is a result of arterial inflammation and obstruction, and to be treated as such,—and is not the result of mere weakness and debility requiring only—as was long fancied—wine, bark, and tonics.

Pathological anatomy has further been of vast use negatively, by demonstrating to physicians that some affections that were formerly deemed inflammatory or organic are not so. How many lives has it saved, by proving that delirium tremens is not to be confounded, as it constantly was confounded at the commencement of the present century, with inflammation of the brain, and is not to be treated, as it was too often treated formerly, on the principles of encephalic inflammation. It has already saved not a few limbs by proving that in hysterical subjects there may occur affections strongly and strangely simulating true and destructive disease of the synovial membrane of the joints, yet without any such disease being present; and it has taught us that many cases of local pain—as in the irritable mamma or testis, etc.—are cases not of local inflammation or local organic derangement,—but cases only of local neuralgia.

These discoveries in pathological anatomy have been revealed by means of the scalpel. But it has latterly acquired other means to aid it in its researches, especially the microscope.

II. PATHOLOGICAL HISTOLOGY is of too late origin to allow the medical profession to judge definitely of the actual extent of usefulness that will be ultimately derived from the application of the microscope to the investigation of morbid structures and effusions. But the microscope has already by itself effected various interesting discoveries in relation to disease. It has, for example, revealed to us one or two affections, the very existence of which was previously unknown, as leucocythemia and sarcina ventriculi. It has disclosed to us the true nature of some maladies, and entirely changed and corrected our notions in respect to them; as by proving the actual vegetable or cryptogamic structure of various eruptions upon the cutaneous and mucous surfaces of the body. Aided by the researches of modern helminthology, it has also shewn that most of the entozoa that occasionally infest the interior of the human system, enter it in the form of ova, along with our food or drink,—and live and dwell extrinsically to us under other animal forms than those which we find them exhibiting within the human viscera and canals. Further, the microscope enables the pathologist to distinguish and determine, with additional accuracy, inflammatory products in the brain and other diseased parts, when their presence might be otherwise a matter of doubt. It affords us also a new element for ascertaining the malignant character of some tumours and discharges. It has eminently cleared up, and enlarged our knowledge of the nature, as well as of the diagnosis, of the different morbid states of the urinary secretions. And perhaps pathological histology will yet—by a fuller application of the cell-doctrine of physiological structures and secretions, to the genesis and development of pathological structures and secretions—advance us onwards to far higher generalizations than science has hitherto reached, regarding the origins, characters, and courses of different diseases and diseased actions and deposits.

III. PATHOLOGICAL CHEMISTRY constitutes another department in which medicine has advanced much within the last half century, and in which it is, I believe, yet destined to advance perhaps infinitely more than in any other. Within the last few years organic chemistry has made enormous steps; but they are still too evidently the unsteady, tottering steps of a young giant. And a herculean amount of work and research remains, ere we can hope to attain all that we may confidently expect to derive in theoretical and practical medicine from the advances of pathological chemistry. The fluids of the body are reckoned by physiologists to be in relation to the solids as ten to one; and in the eclecticism which marks the present era in medicine, physicians are evidently looking every year more and more to an extension in the knowledge of the nature and treatment of diseases, by new and important advances in humorism, rather than by any prospective advances in solidism. Indeed, there seems every reason to believe, that if we knew the pathological chemistry of the blood and fluids, as well as we know the pathological anatomy of the solids of the body—a knowledge I repeat that is to be longed for and worked for, but which has been only yet most slightly acquired—then medicine, both as a science and as an art, would probably make a forward march of the greatest moment. But even within the last quarter of a century, it has already progressed in no small degree by a cultivation of this department of study.

Perhaps the greatest individual discovery hitherto made in pathological chemistry and pathological anatomy, taken together, during the period of which I am speaking, has been the discovery, by Dr. Bright, of the great frequency and great importance of albumen in the urine, as connected often, though certainly not always, with organic changes in the kidney, but indicating always to us some important change in the pathological chemistry of the blood itself. For this discovery, however, a very rude chemistry only was required—the testing, namely, of the urine with heat or nitric acid. A higher and more refined organic chemistry may yet enable the physician to trace other special changes of perhaps equal importance in the urine, or in the remaining fluids of the body in other diseased states. Reasoning, indeed, from circumstances apart from the evidence of any actual chemical proof, many physicians at the present time have little doubt that the origin and essence of most specific forms of febrile affections will yet be found lurking in specific morbid states of the fluids of the body, rather than in any morbid states of the solids; that they are, in other words, referable to a pathological toxicology, rather than to a pathological anatomy. And let me add, that probably most local inflammations will yet also be traced back a step further, viz., to blood-poisoning—varying in its nature, in different types and species of these inflammations. Most probably, for example, some particular forms of toxæmia or blood-poisoning produce the characteristic inflammations of the skin, and different parts of the mucous membrane seen in small-pox, in scarlatina, and in measles; and, it may be, that each of these specifically different blood-poisons produces its own specifically different eruption and effects, by being secreted or eliminated from the blood into the cells or tissues of the affected points, exciting by its presence there, as a foreign or poisonous agent, its own characteristic irritation or inflammation,—and further leading in most, if not in all instances, to the local multiplication of the poison itself by the growth of new cells, each of which contains and probably forms an additional portion of the morbific material. It is a kind of blood-poison, and possibly, also a local misplaced secretion or exudation of that poison, which gives rise to the numerous local serous and other inflammations which are apt to spring up in patients suffering under albuminuria. It is, in all likelihood, some specific form of blood-poisoning, and local poison exudation, that excites the specific local inflammations of gout and rheumatism. Blood-poisoning of another variety, seems likewise to originate and beget the internal inflammatory complications seen so constantly in puerperal and in surgical fevers. A higher chemistry may, I repeat, enable us to detect the presence of special toxicological or morbid states of the blood, as the causes of these and of other varieties of diseases; and a higher chemistry also may yet perhaps enable us to neutralize these pathological poisons in the system; or to eject them from it, by the purgative or depurating action of the lungs, kidneys, intestinal canal, or other excretory organs and surfaces.

Pathological anatomy, pathological histology, and pathological chemistry, the departments to which I have already adverted, have thus won for us, during the last fifty years, much new and precious information regarding the actual character and nature of the diseases of the body. That information, however, would have been in a great degree sterile and barren, had physicians, at the same time, not discovered means for facilitating the detection of the presence of these diversified morbid states in the living patient. Medical science has gained these requisite means, by having, within the last twenty or thirty years, immensely extended and improved the whole subject of

IV. Physical Diagnosis.—When we contrast medical practice at the present day with what medical practice was half a century ago, in nothing truly will we find it differing more than in the increased use which the modern physician makes in most cases of disease, of the different means of physical diagnosis. By its aid he is enabled, in many diseases, successfully to trace, in the different organs of the yet living patient, the exact pathological anatomy of these organs at the time of his examination. He tries by it, in other words, to discover by physical signs during life, that morbid anatomy of different organs which is revealed by the scalpel of the anatomist after death.

For ages the surgeon has enjoyed over the physician greatly superior diagnostic accuracy in the diseases belonging to his special department of the profession; because he could generally apply to the discrimination of them direct tactile examination, and even visual inspection of the affected part; or, in other words, because he could make complete use of these means of physical diagnosis, in forming his opinion with regard to their nature. Latterly, the surgeon has increased, and betimes will still more increase, his already great diagnostic facilities by the use of anæsthetics, and by the adoption of the exploring needle. But in some classes of affections, the physician is now, in relation to physical diagnosis, almost on a par with the surgeon. In affections, for example, of the lungs and of the heart, the physician can trace accurately enough, for practical purposes, the various changes that may be taking place in the pathological anatomy of these organs in the living subject, by the ear,—or through the medium of auscultation and percussion. Analogous means of physical diagnosis have been, as you are aware, more or less successfully extended to other organs of the body, besides those contained within the chest; as to the throat and uterus. And as the precision of our knowledge of the maladies of these parts has been advanced by physical diagnosis, so also, in a corresponding degree, have the precision and the success of our treatment of them. Much more, however, is probably yet to be expected from an extension of the same important branch of study. For if the subject of pathological anatomy is, as some suppose, nearly exhausted, there is still, it must be confessed, great room for the advancement of the physical diagnosis during life of the pathological anatomy of some classes of organs as ascertained after death,—as, for example, the physical diagnosis of the organs contained within the abdomen. And it may be that particular measures of physical diagnosis may yet be devised for this and other regions,—even though at the present moment the discovery of such measures may seem to our minds as unlikely as the discovery of any accurate means of physical diagnosis for diseases of the thorax appeared improbable and chimerical forty years ago, or before the time of Laennec.

Let me merely add on this subject, that the application of the microscope and of chemical tests to the urine and to other fluids of the body, may be truly classed as a new department of physical diagnosis, and one which has been attended with great—and no doubt will yet be attended with still greater—results, in determining the true nature, and consequently in fixing more accurately, the true treatment of different diseases. How simple and precise, for example, is now the knowledge of diabetes, oxaluria, and many morbid conditions of the urine, as compared with the state of diagnostic knowledge in these matters only ten or twenty years ago.

V. Materia Medica has also effected some most remarkable advances within the last few years. In other words, there has not only been, through the instrumentality of morbid and histological anatomy, and of pathological chemistry, a great increase in our knowledge of the nature of diseases—and, through physical diagnosis, a great increase in our knowledge of the discrimination of them—but changes have taken place in the materia medica within the last twenty or thirty years, which have added much to the simplicity as well as the efficacy of the means and weapons by which practical medicine combats the different diseases that occur in the bodies of the sick. Some new medicinal agents have been added to the list of the Pharmacopœia, as iodine, hydrocyanic acid, gallic acid, cod-liver oil, etc. But the changes I advert to are of a much more important kind than this, though consisting truly, not in additions to our list of materia medica, but in modifications only of some of the more potent medicinal agents previously known and employed by physicians. In making this remark, I allude especially to the modern discovery, under the form of the alkaloids, of the active medicinal principles in our vegetable materia medica. By this discovery our therapeutic means have most undoubtedly been simplified and increased in power and value in a wonderful degree during the last quarter of a century. Only some twenty or thirty years ago, there were no means of exhibiting our most powerful and useful vegetable medicines, except in the clumsy form of large powders, or naseous decoctions, infusions, and tinctures. What an astonishing advance has been effected in this matter by the discovery in most of the principal vegetable remedies employed in medicine of alkaloid principles, as quinine, morphia, jalapine, etc. Probably, ere many more years have elapsed, all our principal vegetable remedies will have been forced in this way to yield up, at the command of the chemist, their active and characteristic medicinal principles in such a concentrated and intensified form, that, like those I have already alluded to, they may be prescribed by the physician in doses not calculated, as heretofore, to nauseate the poor patient at the mere bare idea of swallowing drugs. Perhaps medical men have been, as a body, far too remiss and careless in following out the indication of the *jucundè* of Celsus in their prescriptions; and on this ground I, for one, believe that a better covering for a pill than we yet possess, or a way of disarming of their disagreeableness the revolting forms of most medicinal fluids and draughts, would in reality prove a more important discovery for the promotion and utility of true practical medicine, than the discovery of matters of apparently far more scientific bearing and moment.

Possibly in pursuing the same object, we may yet obtain means of fulfilling most of the indications in therapeutics, by administering medicines in other and less repulsive modes than through the stomach, as, by inhalation, inunction, injection, etc.; and that we may yet produce the desired therapeutic effect upon the system with as great certainty, and with infinitely more rapidity, by some of these methods, than by giving medicines of an analogous kind to be swallowed. Medicines, for example, when capable of being inhaled, affect the system with immensely greater rapidity than when the same medicines are taken into the stomach. Perhaps this same principle may yet be advantageously applied to practice in relation to some medicaments. If it is ever, for instance, a matter of importance in some inflammatory or other ailments, to affect the system rapidly and fully with mercury, why may not the chemist discover for us some gaseous and respirable form of mercurial combination, the inhalation of which should salivate in as many hours, as days are now required for the induction of that effect?

Our therapeutic means are most probably destined to have early and important additions made to them through other discoveries in chemistry, particularly in modern organic chemistry. For there can be little doubt that some of those almost innumerable compounds which organic chemistry is daily adding to its stores, will be found to be endowed with marked therapeutic properties, and that we may find in them most powerful and possibly concentrated forms of medicinal agents capable of fulfilling all our principal therapeutic indications—and perhaps with properties superior to the drugs at present used;—as an antiperiodic, for example, even more certain than quinine, and yet without its occasional tendency to produce headache and nervous symptoms;—or a narcotic, as important as that most useful of all drugs—opium—and yet without either its direct constipating effects, or its indirect tendency to excite subsequent nausea, vomiting, etc. Perhaps we may even gain new classes of remedies—as a class capable of producing the elimination of morbid matters by that most extended of all mucous surfaces—the lining membrane of the lungs. And, let me add, the whole subject and theory of therapeutics—the department perhaps the least advanced at the present moment in medical science—seems destined, if we may judge from various attendant circumstances, to undergo ere long some great and important revolutions, by which we will probably acquire a more certain and direct knowledge than we at present possess, of the mode or modes in which different medicines produce their special medicinal effects upon the body, or upon the different organs of it. Doubtlessly, also, if such knowledge comes to be once acquired, it will enable us to apply our remedies with more accuracy and success, in the details of actual practice.

When we turn again from such advances in professional knowledge and professional resources as I have already alluded to, and—excluding for the present all reference to

Obstetrics—consider the practical application of that knowledge and of these resources in the two departments of Surgery and of Medicine, we find that no small progress indeed has been made during the last half century in these two branches of the healing art.

VI. PRACTICAL SURGERY, in various important matters, gives strong and undoubted evidences of sound and solid progress in these later times.

At the commencement of the present century, surgery, as a practical art, was perhaps advanced further than the sister art of medicine. And when we compare its state at the beginning of the nineteenth century with its state two or three hundred years before that date, every one must confess that there had been ample room and scope for that advancement. For, assuredly, surgical operative practice must have formerly been a dreadful department of the profession, when the art of arresting hemorrhage by the power of a silken thread was still unknown or still unpractised; when in every operating theatre, and at every operation, the chafing-dish and searing-irons were as indispensable as are now the lint and the ligatures of the modern surgeon; and when the cries and moans of the poor patient were smothered only, if smothered at all, by the hissing of the heated cauteries against the surface of his bleeding wounds. Ere the dawn, however, of the nineteenth century, the ligature had been universally adopted by surgeons in their operations. Indeed, without it, it seems difficult to perceive how modern practical surgery could have progressed at all. At the same time, is it not possible that surgery, by making one additional step—and finding some more advanced means to do without the irritation of a permanent ligature, and, perhaps, also without the rough and irritating sutures which are used to tie together the lips of the wound—may yet save the sides of the wound from the presence of any foreign body whatever within it, and thus add greatly to the chances of its speedy and general union by adhesive instead of suppurative inflammation?

Since the commencement of the present

century, it is scarcely necessary for me to point out to you, that surgery has advanced in various and most important respects; as—

1. In far more clear and correct views than previously existed of the great pathological doctrines of inflammation and hemorrhage; and in the full and successful adaptation in numberless ways of a knowledge of these doctrines to the actual details of practice;—as, for example, in the simplified modern management of wounds, injuries, fistulæ, etc.; in the processes of obliteration applied to nævi materni, internal hæmorrhoids, vascular tumours, etc.; in the far safer and speedier modes in which ligatures are now daily thrown around the trunks of arteries, or applied to their bleeding orifices; etc.

2. In many important improvements in individual operations, as in the operations for hernia and in amputations; and particularly in the general principles of operative treatment being now much more simple and rational, and hence much more safe and certain, than they were previously. As an

illustration of this last remark, let me remind you of the surgery of aneurisms, and of the vast difference between the treatment of that disease now, by merely arresting or diminishing, by ligature or compression, the arterial current going to the aneurism at a point above—and where the supplying vessel is itself sound—and the treatment of it sixty or seventy years ago, when the whole aneurismal sac was sometimes laid open, or the diseased limb itself amputated. And may not yet another step forward possibly enable surgeons to cure this disease by some safe means, or simple manipulations applied to the aneurismal tumour itself, and capable of producing the direct coagulation of blood in its interior, without the risk and annoyance of either compression or ligature of the artery running to the aneurism?

3. Surgeons have lately introduced some altogether new modes or types of operating. Such is Tenotomy; and different novel and useful operations for the cure of deformities—for the restoration of contracted and useless limbs and joints—for the division of

neuralgic nerves—and for the evacuation of some morbid collections—are now performed on the principle of tenotomy and subcutaneous incision; and consequently without making a bleeding or open wound. The extensive modern class of plastic operations belongs to the same list.

4. One or two individual operations, altogether new, have come into practice since the beginning of the present century, and have been already the happy means of saving no small amount of human life, under circumstances in which there was otherwise no hope or help for the doomed and dying patient; as the ligature of the carotid, subclavian, and other large arteries, for aneurisms, hæmorrhages, and vascular tumours. Among new operations first proposed or practised during the last fifty years, it is necessary also to include excision of the upper and lower jaws; ovariotomy; staphyloraphy; and the perineal incision in aggravated urethral strictures.

5. Surgery, however, has made great advances in other matters. It has become every

day more and more the boast and glory of the surgeon, that he is now able to heal and cure, without operation, cases and diseases in which, twenty or thirty years ago, operations were considered indispensable; and that he can now often also substitute lesser operations for those of a more grave and dangerous character;—as the excision of joints instead of the total and absolute amputation of the limb to which the diseased joint belongs;—the removal of the ends of the bones in compound dislocations instead of the removal of the whole extremity;—the cure of hydroceles and serous cysts by injections, instead of their cure by setons and incisions; etc. In many of the accidents and diseases of the skull, in compound fractures of the extremities, etc. etc., operative measures are far more rarely had recourse to now than they were at the commencement of the present century. In truth, while modern surgery has been, by the aid of anatomy, rendering all its operative procedures more simple and more certain, it has been, at the same time, shewing a marked and strong tendency towards the avoidance of all avoidable operations. Its present acknowledged aim is far more than formerly, the medical preservation and cure rather than the surgical amputation and excision of diseased parts. In many directions and respects, it is becoming every day more medical and less operative in its character. Witness the treatment of scrofulous bones, joints, etc., by diet, rest, tonics, and cod-liver oil, instead of their former treatment by issues, incisions, and amputations. There will always, of course, be lesions, diseases, and injuries, only capable of being remedied and removed by operative interference; but the perfection of surgery would perhaps be—what it never will be—the power, namely, of removing and remedying these lesions, and diseases, and injuries, without the assistance of knife or scalpel.

6. In few matters has surgery more improved than in the dressings and cure of wounds and external ulcers. For how much more simple, and how much more efficacious too, are the light water-dressing and slight medicinal lotions of modern surgery, than

were the cumbersome and complex layers of ointments, of pledgets, of compresses, rollers, straps, bandages, etc., which were almost universally used by practitioners thirty or forty years ago?

7. Further, it has been principally, during the time to which these observations apply, that the attention of the surgeon has been directed to the causes which lead to death after operations, with a view of trying to avoid and avert these causes. No point has been better established in modern times than the important fact that, after surgical operations, surgical patients do not die of surgical complications, as hæmorrhage, mortification, tetanus, etc., but die in from eighty to ninety per cent, from complications of a truly medical nature, namely, blood-poisoning and internal inflammations, as phlebitis, pleuritis, pneumonia, peritonitis, etc. And I do believe that, at the present moment, any individual in the profession, who, in surgery or in midwifery, could point out some means of curing, —or some prophylactic means of averting by antecedent treatment,—the liability to these

analagous or identical diseases—viz., surgical or puerperal fever—such a fortunate individual would, I say, make, in relation to surgery and midwifery, a greater and more important discovery than could possibly be attained by any other subject of investigation. Nor does such a result seem hopelessly unattainable; particularly when we see the occurrence of the disease in question—namely, surgical or puerperal fever—regulated by some special, constitutional, and other circumstances, which we may yet be able to defect and remove. Surgical fever, for instance, sometimes shews no tendency to occur, even after the most severe forms of operation; whilst, in other individuals, it will occasionally spring up suddenly and fatally after the most trifling use of the knife or ligature. It will occur after almost all operations in one season or one hospital; and not after any operations in other seasons and other hospitals. And if its supervention is thus regulated and modified by various special circumstances, why may medical science not yet detect, and be yet able to control, change, modify, and regulate these circumstances? Or if once the blood does become infected and altered, and the disease is actually established, why may we not hope for the discovery of means to eject the existing poison by some excretory organ, as the kidney, skin, lungs, etc.; or why may we not yet find even some direct antidote against the poison as it circulates in the blood itself?

Lastly, As one of the latest improvements in the art of surgery, and as one in which the members of this Society have taken no small interest, permit me to allude to the power which the surgeon now possesses of wrapping the patient in a painless anæsthetic sleep, both whilst his body is being, in the first instance, examined for painful injuries and diseases—and whilst it is being afterwards subjected to the cauteries, scalpels, sutures, saws, pulleys, and other horrors of the operating table—thus almost realizing, in this artificial abrogation of pain and suffering, those dreams of the mystic and marvellous which the fervid fancy of our younger days was taught to ascribe to the enchantment of the Arabian

Nights, and the spells and charms of bygone ages.

VII. Practical Medicine has advanced during the last half century, perhaps as remarkably, or still more remarkably, than surgery. The modern physician has acquired a far more extended knowledge than his predecessor of the last generation had, of the nature and diagnosis of the various diseases to which the body is liable. And in proportion as his knowledge on these points has become more certain and precise, so also has he been able to apply his medicinal measures and weapons with a greater certainty and precision for the relief and removal of them. Besides, at the present day, the medical man knows, I believe, far better than was ascertained formerly, the wonderful resources of nature in the cure of many diseases, inflammatory as well as febrile; acute as well as chronic. He knows more precisely where he ought to strike in to aid nature with the resources of art. He knows also more precisely where he should leave nature entirely to her own unassisted efforts;—and every step of true progress in the direction of this latter inquiry, forms undoubtedly—whatever some may think or aver to the contrary—a step of true advancement in practical as well as in scientific medicine.

In evidence of how much practical medicine has latterly progressed, I might again refer to some of the important advances to which I have already alluded under the previous heads of pathological anatomy, physical diagnosis, and materia medica; and I might also dilate, if I had not already occupied your time too long, on many individual improvements in the practice of medicine, in relation to particular diseases,—as to the cure of scorbutus and its banishment from our fleets; to the introduction in later times of iodine in the treatment of goitre and other affections; to the great and important changes that have taken place in the detection and treatment of the oxaluric, of the phosphatic, and other diatheses indicated by the state of the urine; to our increased knowledge of the nature, diagnosis, and treatment of the various local diseases of the head, chest, abdomen, and pelvis; to the increased certainty and success with which we can now adapt our curative treatment to the relief or removal of the numerous ailments complicated with, or originating in typhus fever, in scarlatina, albuminuria, scrofula, rheumatism, gout, and other general diseases; and to the vast additions latterly made to our previous knowledge of the nature and unspeakable importance of various prophylactic and hygienic causes and measures. Let me content myself, however, with pointing out more particularly one or two special instances of the modern advancement of the art of physic on an enlarged scale as illustrations of the fact that practical medicine has—during the last fifty or sixty years—made greater strides than practical surgery, or indeed—as I believe I may justly add—greater strides than any other branch of practical knowledge whatever.

1. As such an illustration, look at the whole class of infantile diseases. During the course of the last century, some of the highest English authorities in their own days, on such affec-

tions, variously believed that infantile diseases ought to be considered as all the results of febrile action, and treated with febrifuge means; or all the results of weakness, and treated with tonics and stimulants; or all the results of the irritation of worms, and treated principally by different anthelmintics. The pathological investigations, however, of the last thirty years have proved that the different organs of the child are liable to nearly as numerous and diversified morbid actions as the same organs are in later life;—that the same classes or types of diseased action occur in the system of the child as occur in the system of the adult;—that some maladies, particularly of an inflammatory character, as pneumonia, peritonitis, encephalitis, etc., which were supposed to be very rare in infancy, are, on the contrary, exceedingly common during that fragile period of life;—and that the medical management of infantile maladies must be varied as in the adult, according to the individual disease present, and cannot be conducted on the belief that all affections in infancy are amenable to one or two modes of general treatment. The hygiene and management of infancy have in an equal degree improved. And the whole changes in these respects have produced great changes in the mortality of the earlier years of life. Formerly, towards the middle of the last century, fifty or sixty out of every hundred children born in London, died before they had reached their fifth year of age; but the mortality has gradually and steadily diminished, so that now not above thirty or thirty-five in every hundred die at that early period. At the present time there are above 600,000 children born annually in Great Britain. According to the above scale of mortality, above 300,000 of these would have perished formerly before they were five years old, now only about 200,000 die during the first five years of life; thus shewing a saving of human life in this item alone, in the population of our island, to the extent of at least 100,000 human beings a year.

2. Or, with a view of tracing the recent progress of medicine, let us consider for a

moment another and very numerous class of ailments, the most afflicting of all that can fall upon man—I mean those included under the general term of insanity. Everywhere some fifty or sixty years ago, or up to the end of the last century,—and in too many places far, far on in the present century,—the unhappy maniac had seldom ought else for his dark lot but chains and a dungeon—starvation and filth; and he received little or nothing else for his treatment but stripes and scorn—provocations and contumely. At the commencement of the present century, the poor lunatic, when once incarcerated in an asylum, seemed utterly and for ever cut off from the friendship and the charity of his fellow-mortals; he was a man buried, as it were, while he was yet alive; a being deemed incapable of human feelings, and almost undeserving of human sympathy. Need I say how changed all this is now; or what the happy results have been since such poor sufferers were duly subjected to proper medical and moral management, and were treated as men still possessing the feelings, and impulses, and affections of man. If any one wishes for a test of the modern march and progress of practical medicine, he would find a strong and startling criterion of it in tracing the internal history of lunatic asylums fifty years ago, and contrasting it with what lunatic asylums are at the present day.

3. Or let us glance at the advancement of modern physic in a direction in which the science of the physician requires, for the finishing of its work, the aiding hand of the statesman. Two of the great objects of practical medicine are the preservation of human health and the prolongation of human life. These objects are, no doubt, capable of being attained on the large scale by the prevention of disease much more than by its cure. Before, however, we can exercise any power of preventing diseases, it is in the first instance indispensable that we should know the causes that produce them,—in order that, if possible, we may avert from individuals, and from communities of individuals, the morbific operation of these causes.

The study of the causes of diseases has

in one respect not progressed much during the last half century,—for there still remain,—as unsettled as ever, the very debated and debateable questions regarding the influence of contagion, of malaria, of cold, etc. But in another respect the study of the causes of diseases,—and the prevention of diseases by the methodized avoidance of their causes,—has made a mighty step forward during the last twenty or thirty years. For within that period the vast importance of various sanatory measures has in a special manner rivetted the attention, and engaged the earnest investigations and efforts of some of our most distinguished professional brethren. These investigations and efforts have proved to us that the attack of almost all diseases—sporadic as well as epidemic, but particularly the latter—are heightened and increased, both in frequency and intensity, in our households and communities, by the want of sufficient air, or sufficient water, or sufficient drainage, as well as by the very deleterious—but too often undreaded—effects of decomposing animal and vegetable matters allowed to remain within and around our dwellings, and by human effluvia becoming collected in our ill-constructed houses—and specially concentrated in our small and stifling bed-rooms. They have proved to us more,—for they have shewn by numerous late direct applications of such views to practice, that when the preceding causes of disease have been set aside from special communities by proper sanatory arrangements, human life in such communities has, as a consequence, become prolonged, and the physical as well as the moral health and happiness of the inhabitants been also correspondingly ameliorated.

In several districts of our largest British cities, the annual mortality has thus been already remarkably decreased. But only a fraction of this promising work has yet been accomplished. Our country cottages and villages require a revolution in their construction, cleanliness, and general economy, before the possible standard of human health and longevity is reached among our rural population. But to a far greater extent do our towns and town habitations demand this salutary change.

The average length of life in the city population of Great Britain is fully a third less than the average length of life in its rural population. The average mortality of life amounts to about 1 death yearly in every 25 to 35 of the inhabitants of our cities;—while there only dies yearly of the inhabitants of the country about 1 in every 50—a striking and startling difference. In some cities, out of every 100 born, only 25, or one-fourth, reach the fiftieth year of life; while in some rural districts, out of every 100 born, 50, or one-half, attain the same age. But this deterioration in the value and chances of human life in our populous towns is more or less directly under human control; for an ample supply of pure air and pure water, the avoidance of over-crowded houses, the removal of animal refuse and effluvia, the prevention of destitution, and of intemperance, etc., would place in a great measure the population of our cities in the same sanatory conditions as the population of our rural districts. The attainment of such an object, even partially, would doubtless save many, many thousands of the lives of our fellow-countrymen annually, in addition to the annual thousands already saved by it; and assuredly the whole subject forms a splendid problem, or rather a series of problems, deeply worthy of the study and solution alike of the physician, the philanthropist, and the politician.

4. In this rapid survey, let us look for one moment longer at one other advancement in practical medicine since the days of Watt —and no doubt the greatest of all. I allude to the discovery of vaccination. The vast importance of vaccination can only be appreciated when we venture to consider for a moment what would at the present day have been the dreadful state of mortality in our own and in other countries from small-pox, if no such discovery had been made. If small-pox were as fatal now—with our population of twenty millions—as it was during the latter period of the last half century, or before vaccination, it would destroy in Great Britain alone, some 80,000 lives a year; for with a population of about eight millions, it then yearly produced a mortality amounting to

30,000 or 40,000 deaths. Physicians may proudly point to this single discovery alone, as a victory of medicine over disease and death, unequalled in its greatness and importance by any of the wondrous discoveries that have been made through the whole past century in any of the physical arts or practical sciences. By itself alone vaccination has extended already the average sum of man's life upon earth some three or four years. Nor are the marvellously simple means by which medicine has been able to accomplish this mighty end, less remarkable than the end itself. With an almost invisible speck of matter upon the point of his lancet, the medical man can in a great measure defy one of the most fatal, and at the same time one of the most loathsome, diseases that ever afflicted the human race. For even when it spared life, we must remember how often in former times an attack of small-pox cruelly spared not the features and the very eye-sight of the poor patient. And indeed the more deeply any man considers the subject, the more will he venerate the name and discovery of Jenner, to whom was thus, as it were, entrusted the mighty and responsible office of shutting one of the great gates of human death. " He stood between the living and the dead, and the plague was stayed." During the last half century, military science has, it is often averred, advanced greatly and permanently; that is, it has invented during that period, much new and dreadful machinery, and many new and horrible missiles for the destruction of man and of man's works. During the same period, in the discovery of vaccination alone, medicine has invented a means far more potent to save, than the soldier has invented means potent to destroy. If modern military science can boast of the discovery of wondrous shells and shrapnells, of destructive rockets and rifles, by which the deaths of thousands of men may be easily effected—modern medical science can boast of the discovery of a small vesicle, by the multiplied contents of which, the death of thousands and tens of thousands of men may be easily prevented. For truly, the millions of money expended in the vast military stores of Woolwich and Cherbourg, lack the ability to destroy human life to any such degree as one drop of despised cow-pox matter, with its powers of multiplication in the system, has the ability to save it. The lancet of Jenner, has, during the last half century alone, saved in the world more human lives, than during the past or any other century in the history of mankind, gunpowder and the sword were ever yet successful in slaying. How often do we find the art of war described as a noble and honourable art! But when we consider in our hearts the relative effects of war and of medicine upon human life and human happiness, the physician may surely arrogate such a title for the art of medicine on infinitely better and higher grounds than the soldier can claim it for the art of war.

The preceding observations refer to what medicine has done during the last fifty or sixty years—to some of the principal steps which it has made—to some of the principal advances which it has effected during that period. And I do think that such a glance at the past—however rapid and imperfect—is calculated to fill us with cheering and bright hopes for the future. Much has been done in medical and surgical science; but no doubt much—very much more—requires to be effected, and will be effected. Let me advert for a moment to one consideration as calculated to inspire our hearts with every confidence, that a continuation of earnest research and labour on the part of the profession will be rewarded with a continuation of success in the alleviation and removal of diseases.

It is now some two hundred years since Sydenham wrote and practised in London. Consider for an instant what this father of English medicine knew as the most fatal diseases in England at that time. Six of the most destructive diseases, or classes of diseases, to human life in that age were,—according to Short's mortality bills,—plague, ague, dysentery, scurvy, child-birth, and small-pox. These maladies, however, enjoy their fatal pre-eminence no longer. We have banished the plague, which in the olden times often destroyed in London more lives than all other maladies counted together. We have rooted out and modified the ague, so that it is rarely a fatal affection now, while every year it destroyed thousands formerly. Scurvy has almost disappeared from our mortality bills. Dysentery, though still sometimes a fatal disease, is infinitely less common and infinitely more under medical treatment, than it was at the time of Sydenham. At that date, or in the middle of the 17th century, about 1 in every 40 or 50 women delivered in London died of child-birth or its consequences; but gradually, as medical science has advanced, that mortality has decreased, till now not above 1 in 150 or 200 die. We have in Great Britain about 600,000 accouchements annually; and still above 3000 of the mothers perish in childbirth. If the old mortality, however, of the 17th century yet held good, and this department of practice had not greatly progressed and improved, not less than 11,000 or 12,000 maternal lives would now be lost by the present proportion of annual births;—the advancements of modern science thus effecting in this item alone a saving of the lives of 7000 or 8000 mothers every year. And as for small-pox—another of the great sources of human death in the days of Sydenham—this fearful and most destructive malady has, as we have just stated, been almost entirely destroyed by the discovery of Jenner.

The most formidable and fatal diseases of Sydenham's time sustain then the pre-eminence of their formidable and fatal character no longer. And may we not hope that a couple of centuries hence, the very same fact may hold true of some of those diseases that are at present most destructive and deadly in their effects upon our population? Does not the history of the past suffice to encourage within us a bold belief that perhaps in half a century or a century hence, our present most fatal diseases may, by the advancement of hygienic and medical means, be our most fatal diseases no longer? At the present day we have, according to the registrars' official returns for England and Wales, consumption producing above 50,000 deaths a year; convulsions above 22,000 deaths; pneumonia and bronchitis above 30,000 deaths a year; typhus fever and scarlet fever generally above 20,000 deaths each; and measles, hooping-cough, rheumatism, diarrhœa, hydrocephalus, etc., destroying human life among us in less, but still in fearful numbers. These several diseases stand at the present time as the highest on the roll of destructive agencies that prevail in British practice. For one I confess that I cannot but entertain an ardent belief that medical science may yet devise measures, prophylactic perhaps rather than curative, to stay the great destruction of human life prevailing amongst us from the first, for example, of these affections, phthisis. Perhaps a more advanced pathology and chemistry may yet ere long furnish us with more enlightened and practical views of pneumonia and other inflammatory disorders than we yet possess, and arm us with more sure and potent medicinal weapons and resources against them. We have, from the experience of the last few years, every reason to hope that the whole class of zymotic diseases will be greatly subdued betimes in intensity and violence, when the investigation of the physical causes predisposing to them, or even actually exciting them, is more fully expiscated.

Besides if by vaccination during infancy medicine has devised means to arrest the ravages of small-pox, may it not yet devise some means also, by inoculation or otherwise, to arrest the ravages of scarlet fever and measles, of hooping-cough, of typhus fever, and perhaps of the whole class of non-recurrent diseases? And even if we fail to arrest them, we may possibly find out for the varying animal poisons producing these diseases, antidotes as certain as quinine and arsenic are antidotes against the poison of marsh fever.

Let us at least not sit indolently down and argue ourselves into the belief that it is impossible to attain such results. The conquest of small-pox seemed to our forefathers a hundred years ago as impossible as the conquest of these maladies can look to any one now; and yet we all know that the subjugation of small-pox was effected by the genius of one man and by the devotion of one mind to its accomplishment. Some time before Jenner turned his attention to the subject, the learned and accomplished Dr. Mead—the first London physician of his day—wrote of the utter hopelessness of the very idea of battling with and vanquishing such a formidable enemy to human life and happiness as small-pox. He speaks of the possibility of a "specific antidote being found against the contagious poison" of small-pox—that is, an antidote "by which it may be so thoroughly destroyed, that though it had been received into the body, it may not produce the disease," as an idea as wild and chimerical as that of alchemy; and one, in his opinion, outraging "the principles and elements of things that are so certain and so well established by the permanent laws of nature." These disheartening opinions of Dr. Mead regarding the hopelessness of ever gaining a prophylactic for small-pox, were published in 1747. Before, however, fifty years had elapsed, Jenner had both discovered, and successfully adapted to practice, the great prophylactic measure that has rendered his name imperishable in the annals of the human race. And thus the happy results of Jenner's labours,—besides their own intrinsic and inestimable worth,—descend to us stamped with a precious lesson from him of hope and perseverance under alleged impossibilities; for these results preach loudly to the profession in all time to come, that we should never permit any apparent improbabilities to prevent us from going always onwards and forwards in earnest search for possible means of conquering and curing diseases even of the most formidable and fatal kind.

In conclusion, let me add one word more. I have hitherto spoken of associations of the profession, like that of the Medico-Chirurgical Society, as principally calculated to advance medical observation amongst us, and to promote the general extension of medical science. There is, however, another high and important advantage belonging to such associations as those formed by this Society,—another benefit flowing from their construction. For such associations are not only destined to spread professional zeal and information among their constituent members; they are destined also to promote professional good-will and genuine brotherhood amongst them. They are intended to cultivate the heart, as well as to cultivate the head;—to increase and deepen our feeling of professional fraternity and kindness, as well as increase and extend our stores of professional acquirements and knowledge. During the time that I may have the pleasure and the honour of occupying the Chair to which you have elected me, it shall be my constant endeavour to use my influence in it, so that while every freedom is given to professional debate, there may, if possible, be nothing uttered that can unnecessarily hurt the feelings of any member of the profession, present or absent. And I feel sure that in attempting to attain this end I shall ever meet with your hearty concurrence and aid.

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